ABSTRACT OF THE DISCLOSURE

In a trench super junction semiconductor element having a parallel p-n junction layer 14 with n-drift regions 12 and p-partition regions 13, both extending in a depth direction, being alternately joined, a part 20 in a shape of a three-dimensional curved surface in the end portion of each of trenches is formed in a p-partition region 13. A section in the p-partition region 13 surrounding the part 20 in a shape of a three-dimensional curved surface of the end portion of each of the trenches is made as a p^+-region 21 in which an impurity concentration is higher than that in a section thereunder so that an electric field is increased at a boundary between the p^+-region 21 and the n-drift region 12, thereby lessening electric field concentration to the part 20 in a shape of a three-dimensional curved surface of the end portion of the trench. Moreover, the section in the p-partition region 13 surrounding the part 20 in a shape of a three-dimensional curved surface in the end portion of the trench can be formed wider than the section thereunder. This inhibits lowering in a breakdown voltage and, along with this, increases reliability of a gate insulator film.